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(54) METHOD FOR ALLOCATING IDENTIFIER OF DATA BEARER, AND TERMINAL DEVICE AND NETWORK DEVICE

VERFAHREN ZUR ZUORDNUNG EINES IDENTIFIKATORS EINES DATENTRÄGERS SOWIE ENDGERÄTEVORRICHTUNG UND NETZWERKVORRICHTUNG

PROCÉDÉ D'ATTRIBUTION D'IDENTIFIANT DE SUPPORT DE DONNÉES, ET DISPOSITIF TERMINAL ET DISPOSITIF DE RÉSEAU

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Description

Technical Field

[0001] The disclosure relates to the technical field of information processing, and in particular to a method for allocating an Identifier (ID) of a data bearer, a terminal device, a network device and a computer storage medium.

Background

[0002] In Long Term Evolution (LTE) dual connection, an identifier used by each bearer is referred to as a Data Radio Bearer Identifier (DRB ID). The bearer, no matter for a Master Cell Group (MCG) or for a Secondary Cell Group (SCG), is allocated and configured by a base station (such as a Master Node (MN) or a Secondary Node (SN)) to a terminal device. In an NR, both the MN and the SN may perform management on DRBs. If an SN wants to increase one DRB, the SN needs to send a corresponding configuration command on a Signaling Radio Bearer (SRB) 3.

[0003] However, in the process of increasing the DRB, the SN is not always able to know which DRB ID has been used by a terminal device. Therefore, if the SN directly configures a DRB ID, the problems of conflict and confusion of the DRB ID may be caused.

[0004] WO 2016/184343 A1, US 2016/081081 A1, US 2017/367015 A1 and WO 2016/000322 A1 provide respective technical solutions; however, the above mentioned problem still remains unsolved.

Summary

[0005] In order to solve the above-mentioned technical problems, the embodiments of the disclosure provide a method for allocating an ID of a data bearer, a terminal device, a network device and a computer storage medium.

[0006] An embodiment of the disclosure provides a method for allocating an ID of a data bearer, which is applied to a terminal device and the method is as defined in Claim 1.

[0007] An embodiment of the disclosure provides a terminal device, and the terminal device is as defined in Claim 5.

[0008] An embodiment of the disclosure provides a network device, and the network device is as defined in Claim 9.

[0009] An embodiment of the disclosure provides a terminal device, and the terminal device is as defined in Claim 10.

[0010] An embodiment of the disclosure provides a computer storage medium and the computer storage medium is as defined in Claim 11.

[0011] According to the technical solutions in the embodiments of the disclosure, the terminal device can allocate or reconfigure the DRB ID, so that the problem of a potential conflict of the DRB ID when the MN and the SN respectively and independently configure a DRB can be solved.

Brief Description of the Drawings

[0012]

Fig. 1 shows a first schematic diagram illustrating the flow of a method for allocating an ID of a data bearer provided by an embodiment of the disclosure.
Fig. 2 shows a second schematic diagram illustrating the flow of a method for allocating an ID of a data bearer provided by an embodiment of the disclosure.
Fig. 3 shows a third schematic diagram illustrating the flow of a method for allocating an ID of a data bearer provided by an embodiment of the disclosure.
Fig. 4 shows a fourth schematic diagram illustrating the flow of a method for allocating an ID of a data bearer provided by an embodiment of the disclosure.
Fig. 5 shows a schematic diagram of a composition structure of a terminal device provided by an embodiment of the disclosure.
Fig. 6 shows a schematic diagram of a composition structure of a network device provided by an embodiment of the disclosure.
Fig. 7 shows a schematic diagram of a hardware architecture provided by an embodiment of the disclosure.

Detailed Description of the Embodiments

[0013] In order to know the characteristics and technical contents of the embodiments of the disclosure thoroughly in more detail, the implementation of the embodiments of the disclosure will be described below in detail in combination with accompanying drawings. The appended accompanying drawings are merely for reference, and are not intended to limit the embodiments of the disclosure.

Embodiment 1

[0014] An embodiment of the disclosure provides a method for allocating an ID of a data bearer, which is applied to a terminal device and may include the following operations shown in blocks 101 and 102 of Fig. 1.

[0015] In block 101, when receiving DRB configuration information sent by a network side, the terminal device allocates or reconfigures a DRB ID.

[0016] In block 102, the terminal device sends a DRB configuration confirmation instruction to the network side, wherein the allocated DRB ID or the reconfigured DRB ID is used as or is contained in the DRB configuration confirmation instruction.

[0017] The network side in this embodiment may be a network device at the network side, and for example, may

be an SN or an MN.

[0018] The solutions provided by this embodiment will be described below with reference to several scenarios.

Scenario 1

[0019] The operation that when receiving DRB configuration information sent by the network side, the terminal device allocates or reconfigures the DRB ID may be implemented as follows.

[0020] When the DRB configuration information does not contain the DRB ID allocated by the network side, one DRB ID is selected from at least one available DRB ID as the allocated DRB ID.

[0021] In NR DC, an MN knows which DRB IDs have been used by a terminal device, including those of a MCG bearer and a split bearer. DRB IDs corresponding to the split bearer on the MN and the SN are the same. The SN can know DRB IDs of the split bearer and the SCG bearer. The terminal device knows DRB IDs corresponding to the MCG bearer, the split bearer and the SCG bearer. Hence, when the MN (or the SN) configures to increase a DRB without providing any configuration for DRB ID, a terminal device may allocate the DRB ID from at least one available DRB ID, and provide the DRB ID to a base station via an uplink Radio Resource Control (RRC) message.

[0022] For example, referring to Fig. 2, the processing scenario is described from a perspective of information interaction between the SN and the terminal device. The SN sends the DRB configuration information to the terminal device, where a DRB ID is not contained in the DRB configuration information.

[0023] The terminal device selects one DRB ID from at least one available DRB ID as the allocated DRB ID, uses the allocated DRB ID as a DRB configuration confirmation instruction or arranges a DRB configuration confirmation instruction to contain the allocated DRB ID, and sends the DRB configuration confirmation instruction to the SN.

Scenario 2

[0024] When the DRB configuration information contains a temporary DRB ID allocated by the network side, a terminal device reselects a DRB ID, and replaces the temporary DRB ID with the reselected DRB ID.

[0025] Herein, the operation that the terminal device reselects the DRB ID may be implemented as follows.

[0026] One DRB ID is selected from at least one available DRB ID.

[0027] In NR DC, an MN knows which DRB IDs have been used by a terminal device, including those of a MCG bearer and a split bearer. DRB IDs corresponding to the split bearer on the MN and the SN are the same. The SN can know DRB IDs of the split bearer and the SCG bearer. The terminal device knows DRB IDs corresponding to the MCG bearer, the split bearer and the SCG bearer. Hence, when an MN configures to increase a DRB without providing any configuration for a DRB ID, a terminal device may allocate the DRB ID from at least one available DRB ID, and provide the DRB ID to a base station via an RRC message. If the MN or the SN provides a temporary DRB ID via configuration information, the terminal device may rewrite, i.e., reconfigure the DRB ID configured by the network side. In the rewriting procedure, the terminal device may select one DRB ID from at least one available DRB ID known to the terminal device as the reconfigured DRB ID.

[0028] Referring to Fig. 3, the interaction between the SN and the terminal device is described and may include the following operations.

[0029] The SN sends DRB configuration information to the terminal device, where the DRB configuration information contains a temporary DRB ID allocated by the network side.

[0030] The terminal device selects one DRB ID from at least one available DRB ID as a reconfigured DRB ID, uses the reconfigured DRB ID as a DRB configuration confirmation instruction or arranges a DRB configuration confirmation instruction to contain the reconfigured DRB ID, and sends the DRB configuration confirmation instruction to the SN.

[0031] As an exemplary implementation, a manner for acquiring DRB configuration information may be as follows: a downlink RRC reconfiguration message sent by the network side is received; and DRB configuration information carried in the downlink RRC reconfiguration message is acquired.

[0032] Correspondingly, a manner for sending the DRB configuration confirmation instruction may be as follows: an RRC message carrying the DRB configuration confirmation instruction is sent to the network side.

[0033] An embodiment of the disclosure provides a method for configuring a DRB ID, which is different from an existing LTE DC. According to the method, when an SN configures a DRB, an ID of a newly increased DRB is not allocated in a downlink RRC reconfiguration message, or only a temporary ID of the DRB is allocated. When a terminal device receives the configuration signaling, the terminal device allocates a DRB ID, or the terminal device reconfigures the DRB ID temporarily allocated by the SN.

[0034] Therefore, by adopting the above solutions, the terminal device can allocate or reconfigure the DRB ID, so that the problem of a potential conflict of the DRB ID when the MN and the SN respectively and independently configure a DRB can be solved.

Embodiment 2

[0035] An embodiment of the disclosure provides a method for allocating an ID of a data bearer, which is applied to a network device and may include the following operations as shown in blocks 401 and 402 of Fig. 4.

[0036] In block 401, DRB configuration information is

sent to a terminal device.

[0037] In block 402, a DRB configuration confirmation instruction sent from the terminal device is received, where the DRB configuration confirmation instruction contains a DRB ID allocated or reconfigured by the terminal device or a DRB ID allocated or reconfigured by the terminal device is used as the DRB configuration confirmation instruction.

[0038] The network device in this embodiment may be an SN or an MN.

[0039] The solutions provided by this embodiment will be described below with reference to several scenarios.

Scenario 1

[0040] The DRB configuration information not containing a DRB ID allocated by a network side is sent to a terminal device.

[0041] Under such a scenario, the terminal device selects one DRB ID from at least one available DRB ID as the allocated DRB ID.

[0042] In NR DC, an MN knows which DRB IDs have been used by the terminal device, including those of a MCG bearer and a split bearer. DRB IDs corresponding to the split bearer on the MN and the SN are the same. The SN can know DRB IDs of the split bearer and the SCG bearer. The terminal device knows DRB IDs corresponding to the MCG bearer, the split bearer and the SCG bearer. Hence, when the MN (or the SN) configures to increase a DRB without providing any configuration for DRB ID, a terminal device may allocate the DRB ID from at least one available DRB ID, and provide the DRB ID to a base station via an RRC message.

[0043] For example, referring to Fig. 2, the processing scenario is described from a perspective of information interaction between the SN and the terminal device. The SN sends the DRB configuration information to the terminal device, where a DRB ID is not contained in the DRB configuration information.

[0044] The terminal device selects one DRB ID from at least one available DRB ID as the allocated DRB ID, uses the allocated DRB ID as a DRB configuration confirmation instruction or arranges a DRB configuration confirmation instruction to contain the allocated DRB ID, and sends the DRB configuration confirmation instruction to the SN.

Scenario 2

[0045] The DRB configuration information containing a temporary DRB ID is sent to a terminal device.

[0046] Correspondingly, the terminal device reselects one DRB ID, and replaces the temporary DRB ID with the reselected DRB ID.

[0047] In NR DC, an MN knows which DRB IDs have been used by a terminal device, including those of a MCG bearer and a split bearer. DRB IDs corresponding to the split bearer on the MN and the SN are the same. The SN can know DRB IDs of the split bearer and the SCG bearer. The terminal device knows DRB IDs corresponding to the MCG bearer, the split bearer and the SCG bearer. Hence, when an MN configures to increase a DRB without providing any configuration for a DRB ID, a terminal device may allocate the DRB ID from at least one available DRB ID, and provide the DRB ID to a base station via an RRC message. If the MN or the SN provides a temporary DRB ID via configuration information, the terminal device may rewrite, i.e., reconfigure the DRB ID configured by the network side. In the rewriting procedure, the terminal device may select one DRB ID from at least one available DRB ID known to the terminal device as the reconfigured DRB ID.

[0048] Referring to Fig. 3, the interaction between the SN and the terminal device is described and may include the following operations.

[0049] The SN sends DRB configuration information to the terminal device, where the DRB configuration information contains a temporary DRB ID allocated by the network side.

[0050] The terminal device selects one DRB ID from at least one available DRB ID as a reconfigured DRB ID, uses the reconfigured DRB ID as a DRB configuration confirmation instruction or arranges a DRB configuration confirmation instruction to contain the reconfigured DRB ID, and sends the DRB configuration confirmation instruction to the SN.

[0051] As an exemplary implementation, the operation that DRB configuration information is sent to a terminal device may be implemented as follows.

[0052] DRB configuration information carried in a downlink RRC reconfiguration message is sent to the terminal device.

[0053] Correspondingly, the operation that the DRB configuration confirmation instruction sent from the terminal device is received may be implemented as follows.

[0054] The DRB configuration confirmation instruction is acquired from an RRC message sent from the terminal device.

[0055] An embodiment of the disclosure provides a method for configuring DRB IDs, which is different from the existing LTE DC. When the SN configures a DRB, an ID of a newly increased DRB is not allocated in a downlink RRC reconfiguration message, or only a temporary ID of the DRB is allocated. When a terminal device receives the configuration signaling, the terminal device allocates a DRB ID, or the terminal device reconfigures the DRB ID temporarily allocated by the SN.

[0056] Therefore, by adopting the above solutions, the terminal device can allocate or reconfigure the DRB ID, so that the problem of a potential conflict of the DRB ID when the MN and the SN respectively and independently configure a DRB can be solved.

Embodiment 3

[0057] An embodiment of the disclosure provides a ter-

minal device, which may include a first processing unit 51 and a first communication unit 52, as shown in Fig. 5.

[0058] The first processing unit 51 is configured to allocate or reconfigure, when receiving DRB configuration information sent by a network side, a DRB ID, and use the allocated DRB ID or the reconfigured DRB ID as a DRB configuration confirmation instruction or arrange a DRB configuration confirmation instruction to contain the allocated DRB ID or the reconfigured DRB ID.

[0059] The first communication unit 52 is configured to send the DRB configuration confirmation instruction to the network side.

[0060] The network side in this embodiment may be a network device at the network side, and for example, may be an SN or an MN.

[0061] The solutions provided by this embodiment will be described below with several scenarios.

Scenario 1

[0062] The first processing unit 51 selects, when the DRB configuration information does not contain a DRB ID allocated by the network side, one DRB ID from at least one available DRB ID as the allocated DRB ID.

[0063] In NR DC, an MN knows which DRB IDs have been used by the terminal device, including those of a MCG bearer and a split bearer. DRB IDs corresponding to the split bearer on the MN and the SN are the same. The SN can know DRB IDs of the split bearer and the SCG bearer. The terminal device knows DRB IDs corresponding to the MCG bearer, the split bearer and the SCG bearer. Hence, when the MN (or the SN) configures to increase a DRB without providing any configuration for DRB ID, a terminal device may allocate the DRB ID from at least one available DRB ID, and provide the DRB ID to a base station via an RRC message.

[0064] For example, referring to Fig. 2, the processing scenario is described from a perspective of information interaction between the SN and the terminal device. The SN sends the DRB configuration information to the terminal device, where a DRB ID is not contained in the DRB configuration information.

[0065] The terminal device selects one DRB ID from at least one available DRB ID as the allocated DRB ID, uses the allocated DRB ID as a DRB configuration confirmation instruction or arranges a DRB configuration confirmation instruction to contain the allocated DRB ID, and sends the DRB configuration confirmation instruction to the SN.

Scenario 2

[0066] The first processing unit 51 is configured to, when the DRB configuration information contains a temporary DRB ID allocated by the network side, reselect a DRB ID, and replace the temporary DRB ID with the reselected DRB ID.

[0067] The first processing unit 51 selects one DRB ID from at least one available DRB ID.

[0068] In NR DC, an MN knows which DRB IDs have been used by a terminal device, including those of a MCG bearer and a split bearer. DRB IDs corresponding to the split bearer on the MN and the SN are the same. The SN can know DRB IDs of the split bearer and the SCG bearer. The terminal device knows DRB IDs corresponding to the MCG bearer, the split bearer and the SCG bearer. Hence, when an MN configures to increase a DRB without providing any configuration for a DRB ID, a terminal device may allocate the DRB ID from at least one available DRB ID, and provide the DRB ID to a base station via an RRC message. If the MN or the SN provides a temporary DRB ID via configuration information, the terminal device may rewrite, i.e., reconfigure the DRB ID configured by the network side. In the rewriting procedure, the terminal device may select one DRB ID from at least one available DRB ID known to the terminal device as the reconfigured DRB ID.

[0069] Referring to Fig. 3, the interaction between the SN and the terminal device is described and may include the following operations.

[0070] The SN sends DRB configuration information to the terminal device, where the DRB configuration information contains a temporary DRB ID allocated by the network side.

[0071] The terminal device selects one DRB ID from at least one available DRB ID as a reconfigured DRB ID, uses the reconfigured DRB ID as a DRB configuration confirmation instruction or arranges a DRB configuration confirmation instruction to contain the reconfigured DRB ID, and sends the DRB configuration confirmation instruction to the SN.

[0072] As an exemplary implementation, a manner for acquiring the DRB configuration information may be as follows. The first communication unit 52 is configured to receive a downlink RRC reconfiguration message sent by the network side.

[0073] The first processing unit 51 is configured to acquire DRB configuration information carried in the downlink RRC reconfiguration message.

[0074] Correspondingly, a manner for sending the DRB configuration confirmation instruction may be as follows. The first communication unit 52 is configured to send an RRC message carrying the DRB configuration confirmation instruction to the network side.

[0075] Therefore, by adopting the above solutions, the terminal device can allocate or reconfigure the DRB ID, so that the problem of a potential conflict of the DRB ID when the MN and the SN respectively and independently configure a DRB can be solved.

Embodiment 4

[0076] An embodiment of the disclosure provides a network device, which may include a second communication unit 61 as shown in Fig. 6.

[0077] The second communication unit 61 is config-

ured to send DRB configuration confirmation to a terminal device; and receive a DRB configuration confirmation instruction sent from the terminal device, where the DRB configuration confirmation instruction contains a DRB ID allocated or reconfigured by the terminal device or a DRB ID allocated or reconfigured by the terminal device is used as the DRB configuration confirmation instruction.

[0078] The network device in this embodiment may be an SN or an MN.

[0079] The solutions provided by this embodiment will be described below with several scenarios.

Scenario 1

[0080] The network device may further include a second processing unit 62.

[0081] The second processing unit 62 is configured to provide no DRB ID in the DRB configuration information.

[0082] Correspondingly, the second communication unit 61 is configured to send the DRB configuration information not containing a DRB ID allocated by the network side to a terminal device.

[0083] Under such a scenario, the terminal device selects one DRB ID from at least one available DRB ID as the allocated DRB ID.

[0084] In NR DC, an MN knows which DRB IDs have been used by the terminal device, including those of a MCG bearer and a split bearer. DRB IDs corresponding to the split bearer on the MN and the SN are the same. The SN can know DRB IDs of the split bearer and the SCG bearer. The terminal device knows DRB IDs corresponding to the MCG bearer, the split bearer and the SCG bearer. Hence, when the MN (or the SN) configures to increase a DRB without providing any configuration for DRB ID, a terminal device may allocate the DRB ID from at least one available DRB ID, and provide the DRB ID to a base station via an RRC message.

Scenario 2

[0085] The second processing unit 62 is configured to provide a temporary DRB ID in the DRB configuration information.

[0086] Correspondingly, the second communication unit 61 is configured to send the DRB configuration information containing the temporary DRB ID to a terminal device.

[0087] Correspondingly, the terminal device reselects one DRB ID, and replaces the temporary DRB ID with the reselected DRB ID.

[0088] In NR DC, an MN knows which DRB IDs have been used by a terminal device, including those of a MCG bearer and a split bearer. DRB IDs corresponding to the split bearer on the MN and the SN are the same. The SN can know DRB IDs of the split bearer and the SCG bearer. The terminal device knows DRB IDs corresponding to the MCG bearer, the split bearer and the SCG bearer. Hence, when an MN configures to increase a DRB without providing any configuration for a DRB ID, a terminal device may allocate the DRB ID from at least one available DRB ID, and provide the DRB ID to a base station via an RRC message. If the MN or the SN provides a temporary DRB ID via configuration information, the terminal device may rewrite, i.e., reconfigure the DRB ID configured by the network side. In the rewriting procedure, the terminal device may select one DRB ID from at least one available DRB ID known to the terminal device as the reconfigured DRB ID.

[0089] As an exemplary implementation, the second communication unit 61 is configured to send DRB configuration information carried in a downlink RRC reconfiguration message to the terminal device.

[0090] The second communication unit 61 is configured to receive an RRC message sent from the terminal device.

[0091] The second processing unit 62 is configured to acquire the DRB configuration confirmation instruction from the RRC message.

[0092] The embodiment of the disclosure provides a scheme for configuring a DRB ID, which is different from the existing LTE DC. When the SN configures a DRB, an ID of a newly increased DRB is not allocated in a downlink RRC reconfiguration message, or only a temporary ID of the DRB is allocated. When a terminal device receives the configuration signaling, the terminal device allocates a DRB ID, or the terminal device reconfigures the DRB ID temporarily allocated by the SN.

[0093] Therefore, by adopting the above solutions, the terminal device can allocate or reconfigure the DRB ID, so that the problem of a potential conflict of the DRB ID when the MN and the SN respectively and independently configure a DRB can be solved.

[0094] An embodiment of the disclosure further provides hardware architecture of a receiving party device. As shown in Fig. 7, the hardware architecture may include: at least one processor 71, a memory 72 and at least one network interface 73. Various components are coupled together via a bus system 74. It may be understood that the bus system 74 is configured to implement communication and connection among these components. In addition to a data bus, the bus system 74 may further include a power bus, a control bus and a state signal bus. However, for the clarity of description, various buses are integrally marked as the bus system 74 in Fig. 7.

[0095] It may be understood that the memory 72 in this embodiment of the disclosure may be a volatile memory or a nonvolatile memory, or may include both of the volatile memory and the nonvolatile memory.

[0096] In some implementation manners, the memory 72 stores the following elements: an executable module or data structure, or a subset thereof, or an extension set thereof:

an operation system 721 and an application program 722.

[0097] The processor 71 is configured to process the

operations of the method in the foregoing first embodiment, which will not be repeated here.

[0098] An embodiment of the disclosure provides a computer storage medium; the computer storage medium stores a computer executable instruction; and the computer storage medium, when being executed, implements operations of the method of the foregoing first embodiment.

[0099] When being implemented in form of a software function module and sold or used as an independent product, the apparatus in the embodiments of the disclosure may also be stored in a computer-readable storage medium. Based on such an understanding, the technical solutions of the embodiments of the disclosure substantially or parts making contributions to the conventional art may be embodied in form of software product, and the computer software product is stored in a storage medium, including a plurality of instructions configured to enable a piece of computer equipment (which may be a personal computer, a server, network equipment or the like) to execute all or part of the method in each embodiment of the disclosure. The above-mentioned storage medium includes: various media capable of storing program codes such as a U disk, a mobile hard disk, a Read Only Memory (ROM), a magnetic disk or an optical disk. In this way, the embodiments of the disclosure are not limited to any special hardware and software combination.

[0100] Correspondingly, an embodiment of the disclosure provides a computer storage medium, which stores a computer program; and the computer program is configured to execute a data scheduling method in an embodiment of the disclosure.

[0101] It needs to be noted that the part of the description with the alternative does not fall under the scope of the claim.

Claims

1. A method for allocating an Identifier, ID, of a data bearer, being applied to a terminal device and comprising:

   when receiving Data Radio Bearer, DRB, configuration information sent by a network side, allocating or reconfiguring (101), by the terminal device, a DRB ID, wherein the network side is applied to a dual connection system comprising: a Master Node, MN, and a Secondary Node, SN, and the SN is used for configuring a DRB ID; and
   sending (102), by the terminal device, a DRB configuration confirmation instruction to the network side, wherein the DRB configuration confirmation instruction comprises: an allocated DRB ID or a reconfigured DRB ID;
   wherein when receiving the DRB configuration information sent by the network side, allocating or reconfiguring (101), by the terminal device, the DRB ID comprises: when the DRB configuration information does not contain a DRB ID allocated by the network side, selecting one DRB ID from at least one available DRB ID as the allocated DRB ID; or,
   when the DRB configuration information contains a temporary DRB ID allocated by the network side, reselecting, by the terminal device, a DRB ID, and replacing, by the terminal device, the temporary DRB ID with the reselected DRB ID.

2. The method as claimed in claim 1, wherein reselecting, by the terminal device, the DRB ID comprises: selecting one DRB ID from at least one available DRB ID.

3. The method as claimed in any one of claims 1 to 2, further comprising:
   receiving a downlink Radio Resource Control, RRC, reconfiguration message sent by the network side, and acquiring DRB configuration information carried in the downlink RRC reconfiguration message.

4. The method as claimed in any one of claims 1 to 2, wherein sending (102) the DRB configuration confirmation instruction to the network side comprises: sending a Radio Resource Control, RRC, message which carries the DRB configuration confirmation instruction to the network side.

5. A terminal device, comprising:

   a first processing unit (51), configured to allocate or reconfigure, when receiving Data Radio Bearer, DRB, configuration information sent by a network side, a DRB Identifier, ID, and arrange a DRB configuration confirmation instruction to contain the allocated DRB ID or the reconfigured DRB ID, wherein the network side is applied to a dual connection system comprising: a Master Node, MN, and a Secondary Node, SN, and the SN is used for configuring a DRB ID; and
   a first communication unit (52), configured to send the DRB configuration confirmation instruction to the network side;
   wherein the first processing unit (51) is configured to select, when the DRB configuration information does not contain a DRB ID allocated by the network side, one DRB ID from at least one available DRB ID as the allocated DRB ID; or, the first processing unit (51) is configured to, when the DRB configuration information contains a temporary DRB ID allocated by the network side, reselect a DRB ID, and replace the temporary DRB ID with the reselected DRB ID.

6. The terminal device as claimed in claim 5, wherein the first processing unit (51) is configured to select one DRB ID from at least one available DRB ID.

7. The terminal device as claimed in any one of claims 5 to 6, wherein

   the first communication unit (52) is configured to receive a downlink Radio Resource Control, RRC, reconfiguration message sent by the network side; and
   the first processing unit (51) is configured to acquire DRB configuration information carried in the downlink RRC reconfiguration message.

8. The terminal device as claimed in any one of claims 5 to 6, wherein
   the first communication unit (52) is configured to send a Radio Resource Control, RRC, message carrying the DRB configuration confirmation instruction to the network side.

9. A network device, being applied to a dual connection system comprising a Master Node, MN, and a Secondary Node, SN, the SN is used for configuring a DRB ID and the network device comprising:

   a second communication unit (61), configured to send Data Radio Bearer, DRB, configuration information to a terminal device, and receive a DRB configuration confirmation instruction sent from the terminal device, wherein the DRB configuration confirmation instruction contains a DRB Identifier, ID, allocated or reconfigured by the terminal device;
   wherein the DRB configuration information does not contain a DRB ID allocated by the network device, or the DRB configuration information contains a temporary DRB ID allocated by the network device.

10. A terminal device, comprising a processor (71) and a memory (72) configured to store a computer program capable of being executed on the processor (71),
    wherein the processor (71), when executing the computer program, implements operations of the method as claimed in any one of claims 1 to 4.

11. A computer storage medium, wherein the computer storage medium stores a computer executable instruction; and the computer storage medium, when being executed, implements operations of the method as claimed in any one of claims 1 to 4.

Patentansprüche

1. Verfahren zum Zuteilen einer Kennung, ID, eines Datenträgers, das auf eine Endgerätevorrichtung angewendet wird und Folgendes umfasst:

   wenn Datenfunkträger(DRB)-Auslegungsinformationen, die von einer Netzwerkseite gesendet werden, empfangen werden, Zuteilen oder Neuauslegen (101) einer DRB-ID durch die Endgerätevorrichtung, wobei die Netzwerkseite auf ein duales Verbindungssystem angewendet wird, das Folgendes umfasst: einen Masterknoten, MN, und einen sekundären Knoten, SN, und wobei der SN zum Auslegen einer DRB-ID verwendet wird; und
   Senden (102) einer DRB-Auslegungsbestätigungsanweisung durch die Endgerätevorrichtung an die Netzwerkseite, wobei die DRB-Auslegungsbestätigungsanweisung Folgendes umfasst: eine zugeteilte DRB-ID oder eine neu ausgelegte DRB-ID;

   wobei das Zuteilen oder Neuauslegen (101) der DRB-ID durch die Endgerätevorrichtung, wenn die DRB-Auslegungsinformationen, die von der Netzwerkseite gesendet werden, empfangen werden, Folgendes umfasst:

   Auswählen von einer DRB-ID aus mindestens einer verfügbaren DRB-ID als die zugeteilte DRB-ID, wenn die DRB-Auslegungsinformationen keine DRB-ID enthalten, die durch die Netzwerkseite zugeteilt ist; oder
   Neuauswählen einer DRB-ID durch die Endgerätevorrichtung und Ersetzen einer temporären DRB-ID durch die neu ausgewählte DRB-ID durch die Endgerätevorrichtung, wenn die DRB-Auslegungsinformationen die temporäre DRB-ID enthalten, die durch die Netzwerkseite zugeteilt ist.

2. Verfahren nach Anspruch 1, wobei das Neuauswählen der DRB-ID durch die Endgerätevorrichtung Folgendes umfasst:
   Auswählen von einer DRB-ID aus mindestens einer verfügbaren DRB-ID.

3. Verfahren nach einem der Ansprüche 1 bis 2, das ferner Folgendes umfasst:
   Empfangen einer Downlinkfunkressourcensteuerungs(RRC)-Neuauslegungsnachricht, die von der Netzwerkseite gesendet wird, und Erfassen von DRB-Auslegungsinformationen, die in der Downlink-RRC-Neuauslegungsnachricht enthalten sind.

4. Verfahren nach einem der Ansprüche 1 bis 2, wobei das Senden (102) der DRB-Auslegungsbestäti-

gungsanweisung an die Netzwerkseite Folgendes umfasst:
Senden einer Funkressourcensteuerungs(RRC)-Nachricht, die die DRB-Auslegungsbestätigungsanweisung enthält, an die Netzwerkseite.

5. Endgerätevorrichtung, die Folgendes umfasst:

eine erste Verarbeitungseinheit (51), die, wenn Datenfunkträger(DRB)-Auslegungsinformationen, die von einer Netzwerkseite gesendet werden, empfangen werden, dazu ausgelegt ist, eine DRB-Kennung, ID, zuzuteilen oder neu auszulegen und anzuordnen, dass eine DRB-Auslegungsbestätigungsanweisung die zugeteilte DRB-ID oder die neu ausgelegte DRB-ID enthält, wobei die Netzwerkseite auf ein duales Verbindungssystem angewendet wird, das Folgendes umfasst: einen Masterknoten, MN, und einen sekundären Knoten, SN, und wobei der SN zum Auslegen einer DRB-ID verwendet wird; und
eine erste Kommunikationseinheit (52), die dazu ausgelegt ist, die DRB-Auslegungsbestätigungsanweisung an die Netzwerkseite zu senden;
wobei, wenn die DRB-Auslegungsinformationen keine DRB-ID enthält, die durch die Netzwerkseite zugeteilt ist, die erste Verarbeitungseinheit (51) dazu ausgelegt ist, eine DRB-ID aus mindestens einer verfügbaren DRB-ID als die zugeteilte DRB-ID auszuwählen; oder, wenn die DRB-Auslegungsinformationen eine temporäre DRB-ID enthalten, die durch die Netzwerkseite zugeteilt ist, die erste Verarbeitungseinheit (51) dazu ausgelegt ist, eine DRB-ID neu auszuwählen und die temporäre DRB-ID durch die neu ausgewählte DRB-ID zu ersetzen.

6. Endgerätevorrichtung nach Anspruch 5, wobei die erste Verarbeitungseinheit (51) dazu ausgelegt ist, eine DRB-ID aus mindestens einer verfügbaren DRB-ID auszuwählen.

7. Endgerätevorrichtung nach einem der Ansprüche 5 bis 6, wobei

die erste Kommunikationseinheit (52) dazu ausgelegt ist, eine Downlinkfunkressourcensteuerungs(RRC)-Neuauslegungsnachricht, die von der Netzwerkseite gesendet wird, zu empfangen; und
die erste Verarbeitungseinheit (51) dazu ausgelegt ist, DRB-Auslegungsinformationen, die in der Downlink-RRC-Neuauslegungsnachricht enthalten sind, zu erfassen.

8. Endgerätevorrichtung nach einem der Ansprüche 5 bis 6, wobei
die erste Kommunikationseinheit (52) dazu ausgelegt ist, eine Funkressourcensteuerungs(RRC)-Nachricht, die die DRB-Auslegungsbestätigungsanweisung enthält, an die Netzwerkseite zu senden.

9. Netzwerkvorrichtung, die auf ein duales Verbindungssystem angewendet wird, das einen Masterknoten, MN, und einen sekundären Knoten, SN, umfasst, wobei der SN zum Auslegen einer DRB-ID verwendet wird und die Netzwerkvorrichtung Folgendes umfasst:

eine zweite Kommunikationseinheit (61), die dazu ausgelegt ist, Datenfunkträger(DRB)-Auslegungsinformationen an eine Endgerätevorrichtung zu senden und eine DRB-Auslegungsbestätigungsanweisung, die von der Endgerätevorrichtung gesendet wird, zu empfangen, wobei die DRB-Auslegungsbestätigungsanweisung eine DRB-Kennung, ID, enthält, die von der Endgerätevorrichtung zugeteilt oder neu ausgelegt wird;
wobei die DRB-Auslegungsinformationen keine DRB-ID enthalten, die von der Netzwerkvorrichtung zugeteilt ist, oder die DRB-Auslegungsinformationen eine temporäre DRB-ID enthalten, die von der Netzwerkvorrichtung zugeteilt ist.

10. Endgerätevorrichtung, die einen Prozessor (71) und einen Speicher (72), der dazu ausgelegt ist, ein Computerprogramm zu speichern, das vom Prozessor (71) ausgeführt werden kann, umfasst,
wobei der Prozessor (71), wenn er das Computerprogramm ausführt, die Operationen des Verfahrens nach einem der Ansprüche 1 bis 4 implementiert.

11. Computerspeichermedium, wobei auf dem Computerspeichermedium eine von einem Computer ausführbare Anweisung gespeichert ist und das Computerspeichermedium, wenn es ausgeführt wird, Operationen des Verfahrens nach einem der Ansprüche 1 bis 4 implementiert.

Revendications

1. Procédé d'affectation d'un identifiant (ID) d'une porteuse de données, le procédé étant appliqué à un dispositif terminal et comprenant les étapes consistant à :

lors de la réception d'une information de configuration de porteuse radio de données (DRB) envoyée par un côté réseau, affecter ou reconfigurer (101), par le dispositif terminal, un ID DRB, le côté réseau étant appliqué à un système

de double connexion comprenant : un nœud maître (MN) et un nœud secondaire (SN), et le SN étant utilisé pour configurer un ID DRB ; et

envoyer (102), par le dispositif terminal, une instruction de confirmation de configuration DRB au côté réseau, l'instruction de confirmation de configuration DRB comprenant : un ID DRB affecté ou un ID DRB reconfiguré ;

lors de la réception de l'information de configuration DRB envoyée par le côté réseau, l'affectation ou la reconfiguration (101), par le dispositif terminal, de l'ID DRB comprenant l'étape consistant à : quand l'information de configuration DRB ne contient pas un ID DRB affecté par le côté réseau, sélectionner un ID DRB parmi au moins un ID DRB disponible en guise d'ID DRB affecté ; ou

quand l'information de configuration DRB contient un ID DRB temporaire affecté par le côté réseau, resélectionner, par le dispositif terminal, un ID DRB et remplacer, par le dispositif terminal, l'ID DRB temporaire par l'ID DRB resélectionné.

2. Procédé selon la revendication 1, dans lequel la resélection, par le dispositif terminal, de l'ID DRB comprend l'étape consistant à :

sélectionner un ID DRB parmi au moins un ID DRB disponible.

3. Procédé selon l'une quelconque des revendications 1 et 2, comprenant en outre l'étape consistant à :

recevoir un message de reconfiguration de contrôle des ressources radio (RRC) en liaison descendante envoyé par le côté réseau et acquérir une information de configuration DRB transportée dans le message de reconfiguration RRC en liaison descendante.

4. Procédé selon l'une quelconque des revendications 1 et 2, dans lequel l'envoi (102) de l'instruction de confirmation de configuration DRB au côté réseau comprend l'étape consistant à :

envoyer au côté réseau un message de contrôle des ressources radio (RRC) qui transporte l'instruction de confirmation de configuration DRB.

5. Dispositif terminal, comprenant :

une première unité de traitement (51), configurée pour affecter ou reconfigurer, lors de la réception d'une information de configuration de porteuse radio de données (DRB) envoyée par un côté réseau, un identifiant (ID) DRB et organiser une instruction de confirmation de configuration DRB de façon qu'elle contienne l'ID DRB affecté ou l'ID DRB reconfiguré, le côté réseau étant appliqué à un système de double connexion comprenant : un nœud maître (MN) et un nœud secondaire (SN), et le SN étant utilisé pour configurer un ID DRB ; et

une première unité de communication (52), configurée pour envoyer l'instruction de confirmation de configuration DRB au côté réseau ;

la première unité de traitement (51) étant configurée pour sélectionner, quand l'information de configuration DRB ne contient pas un ID DRB affecté par le côté réseau, un ID DRB parmi au moins un ID DRB disponible en guise d'ID DRB affecté ; ou la première unité de traitement (51) étant configurée pour, quand l'information de configuration DRB contient un ID DRB temporaire affecté par le côté réseau, resélectionner un ID DRB et remplacer l'ID DRB temporaire par l'ID DRB resélectionné.

6. Dispositif terminal selon la revendication 5, dans lequel la première unité de traitement (51) est configurée pour sélectionner un ID DRB parmi au moins un ID DRB disponible.

7. Dispositif terminal selon l'une quelconque des revendications 5 et 6, dans lequel :

la première unité de communication (52) est configurée pour recevoir un message de reconfiguration de contrôle des ressources radio (RRC) en liaison descendante envoyé par le côté réseau ; et

la première unité de traitement (51) est configurée pour acquérir une information de configuration DRB transportée dans le message de reconfiguration RRC en liaison descendante.

8. Dispositif terminal selon l'une quelconque des revendications 5 et 6, dans lequel :

la première unité de communication (52) est configurée pour envoyer au côté réseau un message de contrôle des ressources radio (RRC) qui transporte l'instruction de confirmation de configuration DRB.

9. Dispositif de réseau, appliqué à un système de double connexion comprenant un nœud maître (MN) et un nœud secondaire (SN), le SN étant utilisé pour configurer un ID DRB et le dispositif de réseau comprenant :

une seconde unité de communication (61), configurée pour envoyer une information de configuration de porteuse radio de données (DRB) à un dispositif terminal et recevoir une instruction de confirmation de configuration DRB envoyée par le dispositif terminal, l'instruction de confirmation de configuration DRB contenant un identifiant (ID) DRB affecté ou reconfiguré par le dispositif terminal ;

l'information de configuration DRB ne contenant pas d'ID DRB affecté par le dispositif de réseau ou l'information de configuration DRB contenant un ID DRB temporaire affecté par le dispositif de réseau.

10. Dispositif terminal, comprenant un processeur (71) et une mémoire (72) configurée pour stocker un programme informatique capable d'être exécuté sur le processeur (71),
le processeur (71), lorsqu'il exécute le programme informatique, mettant en œuvre des opérations du procédé selon l'une quelconque des revendications 1 à 4.

11. Support de stockage informatique, le support de stockage informatique stockant une instruction exécutable par ordinateur ; et le support de stockage informatique, lorsqu'il est exécuté, mettant en œuvre des opérations du procédé selon l'une quelconque des revendications 1 à 4.

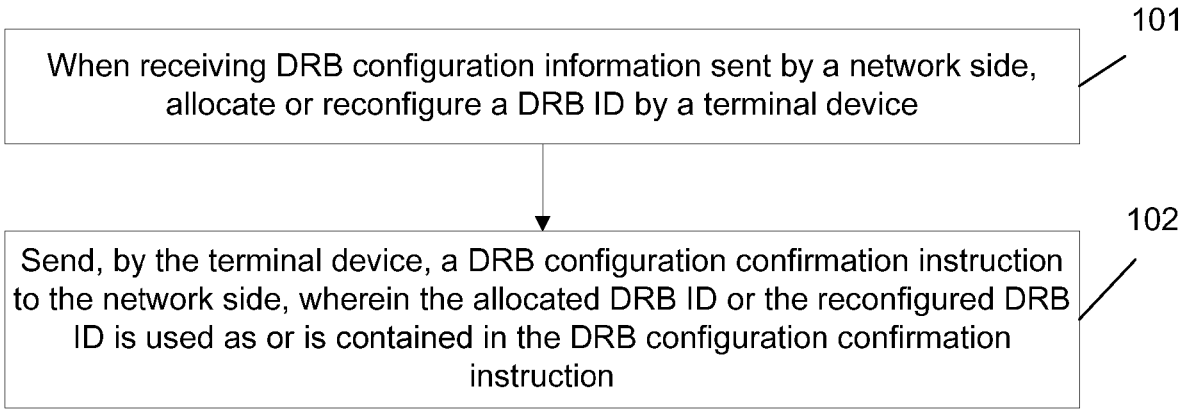
101
When receiving DRB configuration information sent by a network side, allocate or reconfigure a DRB ID by a terminal device
102
Send, by the terminal device, a DRB configuration confirmation instruction to the network side, wherein the allocated DRB ID or the reconfigured DRB ID is used as or is contained in the DRB configuration confirmation instruction

Fig. 1

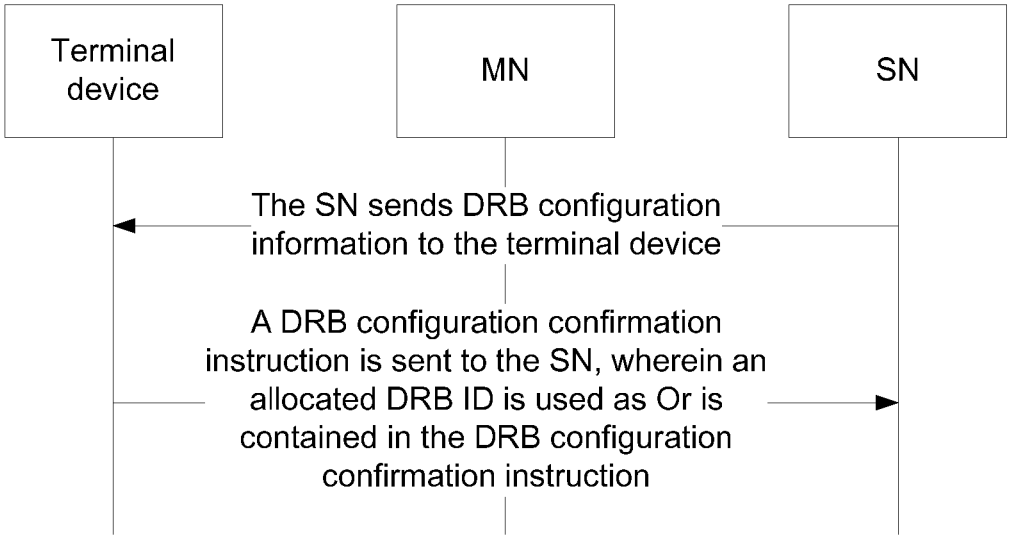
Terminal device
MN
SN
The SN sends DRB configuration information to the terminal device
A DRB configuration confirmation instruction is sent to the SN, wherein an allocated DRB ID is used as Or is contained in the DRB configuration confirmation instruction

Fig. 2

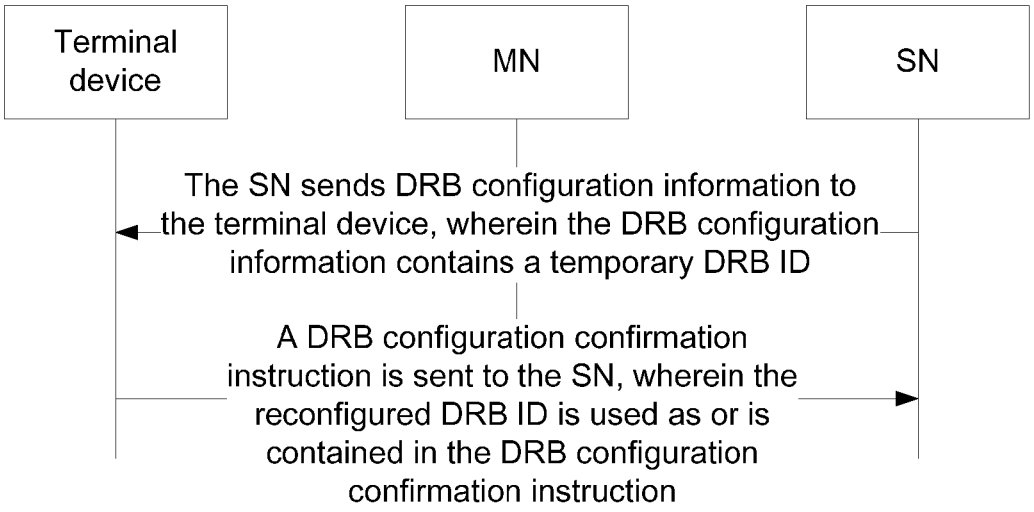

Fig. 3

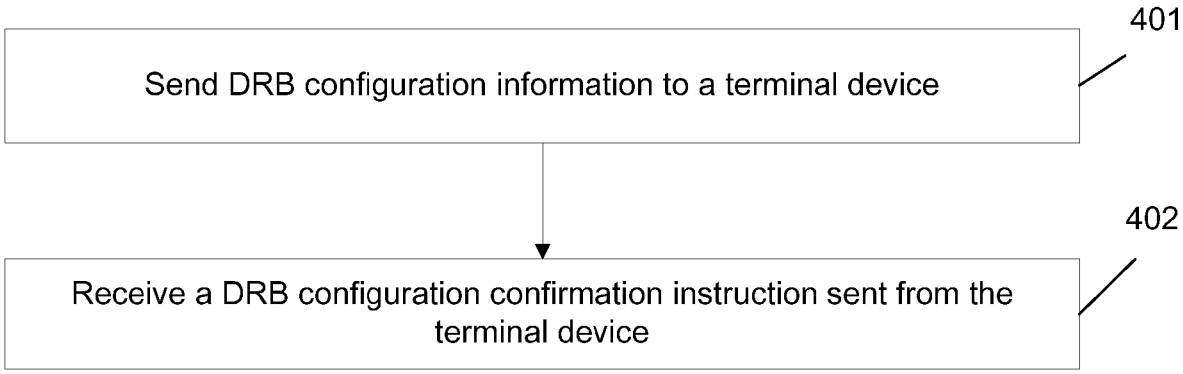

Fig. 4

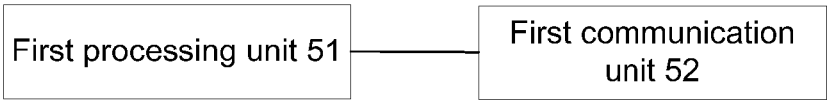

Fig. 5

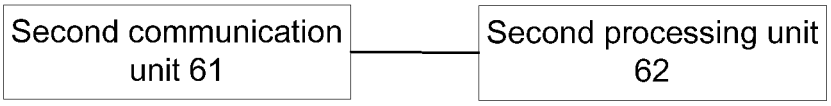

Fig. 6

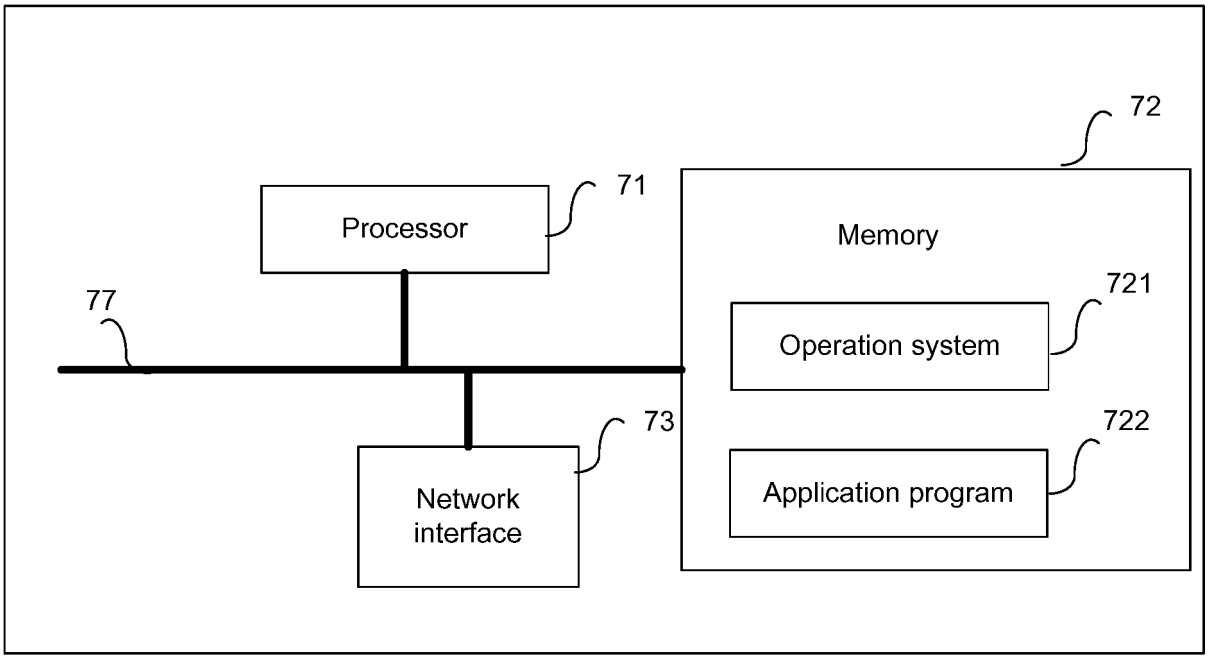
72
71
Processor
Memory
77
721
Operation system
73
722
Application program
Network
interface

Fig. 7

REFERENCES CITED IN THE DESCRIPTION

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